

SIERRA GEOTECHNICAL SERVICES INC.

ENVIRONMENTAL • GEOTECHNICAL • GEOLOGY • HYDROGEOLOGY • MATERIALS

March 29, 2006

Mr. Robert Stark
White Mountain Estates, LLC
P.O. 332 Howell Drive
Ridgecrest, California 93555

Subject: **RESPONSE TO PEER REVIEW**
Phase 2 of Tentative Tract 37-46
White Mountain Estates Subdivision
Chalfant Valley, Mono County, California

Reference: Review Of Earthquake Fault Zone Hazard Evaluation Reports
Tract 37-16 And Phase 2 of Tentative Tract Map No. 37-46
White Mountain Estates Subdivision
Chalfant Valley, Mono County, California
Prepared by AMEC Earth & Environmental dated January 12, 2006

Mr. Stark:

This response letter shall serve as a response to the referenced peer review prepared by AMEC Earth & Environmental (AMEC). AMEC's letter presents five "bulleted" comments regarding their suggestions for clarification and additional information per Section 3, which are reiterated in bold type and followed by our responses, as follows:

- **Lots 39-40**
The designated habitable areas within lots 39 and 40 are based on the fault related features and their structural orientations as observed and subsequently depicted in the log of Trench T-9 and correlation with similar fault features observed in fault Trench T-7. The geomorphic features mapped within lots 39 and 40 have been designated as Qfi (3/4) and Qfo (6) having respective ages varying from 15,000 to as much as 1,000,000 years old as previously determined by Bruce Schell. The alluvial sediments exposed in the fault Trench T-9 are described as being recent to late Pleistocene in age by SGSI. The area designated as habitable with Lot 39 is considered large enough for construction of a typical single family home. The areas designated as habitable within lot 40, while they do not appear to be affected by active fault features, may not be habitable, particularly when considering their narrow shape and the steepness of the existing ground surface.

Response: Although limited in size for Lot 40, the habitable areas were delineated prior to the finalization of the lot boundaries within Tract 37-46. Once this peer review process has been completed, it is our understanding that the lot lines will be readjusted for maximum usage on each habitable area.

BISHOP OFFICE: 214 WEST LINE STREET, SUITE F, BISHOP, CA 93514 • Phn: (760) 873-6800 Fax: (760) 873-6888
MAMMOTH OFFICE: 569 OLD MAMMOTH ROAD, SUITE 222, MAMMOTH LAKES, CA 93546 • Phn: (760) 934-3992 Fax: (760) 934-8832
Email: sgsi@usamedia.tv

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- **Lots 41, 42, 43 and 44**

The designated habitable areas within lots 41 through 44 are based on the fault related features and their structural orientations as observed and subsequently depicted in the log of Trenches T-7 and T-8 and correlation with similar features observed in fault Trench T-9. The geomorphic features mapped within lots 41 through 44 have been designated as Qfo (6) and Qfo (7) having respective ages varying from 200,000 to more than 1,000,000 years old as previously determined by Bruce Schell. The alluvial sediments exposed in the fault Trench T-7 and T-8 are described as being recent to late Pleistocene in age by SGSI. The designated habitable areas within these lots are depicted as north-south oriented bands approximately 40 to 120 [feet] wide that extend across the relatively narrow lots oriented in an east-west direction.

Several calcium carbonate in-filled cracks at Stations 3+05, 3+10, 3+19 and 3+42 within Trench T-7 are very similar to fault related features just north of Significant Fault 1. In addition, their orientation is very similar to the orientation of Significant Fault 1. The project consultant needs to provide an explanation as to why these features are not related to active faulting. Significant deepening of Trench T-7 will likely be necessary to provide a definitive answer to the nature of these features. Acceptance of these features as active fault features will significantly narrow the proposed habitable area at the westerly ends of Lots 41 through 44.

The calcium carbonate and root lined crack at Station 2+46 within Trench T-8 is continuous from the ground surface to the bottom of the trench and is identical to the features shown in the trench log approximately 35 feet to the east. Based on the information provided, this feature should be considered the result of active faulting. Acceptance of this feature as an active fault feature will reduce the habitable area as currently proposed at the westerly end of Lot 44.

Response: In conformance with the second paragraph of the peer review comment above, it is our professional opinion that the calcium carbonate in-filled cracks at Stations 3+05, 3+10, +19 and 3+42 within Trench T-7 are the result of ground-shaking phenomena only. This interpretation is supported by the observation that each crack diminishes in width with depth before reaching the trench bottom, and also by a cumulative visual comparison of their very minor nature as compared to the abundance of significant faulting observed and logged elsewhere. Additionally, the calcium carbonate linings within these cracks are typical and common for the area, and they are the end result of evaporation that follow precipitation events. By contrast, fault-related travertine deposits are generally derived from mineralized groundwater that upwells from below along faults and precipitate out travertine as a result of temperature and/or pressure drop upon approaching the ground surface. Further review shows that no offsets, changes in structure, or abrupt changes in lithologies were observed or logged near these features. Therefore, deepening of Trench T-7 was not performed, and the proposed habitable areas delineated at this location remain unchanged.

In conformance with the third paragraph of the peer review comment above, it is our professional opinion that the calcium carbonate and root-lined crack at Station 2+46 be accepted as an active fault feature. As a result, the proposed habitable area delineated at this location has been removed, and the revised habitable area is delineated on the revised Geologic Map.

- **Lot 45**

The designated habitable areas within Lot 45 are based on the fault related features and their structural orientations as observed and subsequently depicted in the logs of Trenches T-5 and T-6. The geomorphic features mapped within Lot 45 have been designated as Qfy (2), Qfi (3/4) and Qfo (6) having respective ages varying from Holocene to Middle-Early Pleistocene as previously determined by Bruce Schell. The alluvial sediments exposed in the fault Trench T-5 and T-6 are described by SGSI as being recent to late Pleistocene in age. The designated habitable areas within Lot 45 are depicted as two triangular shaped areas that are approximately 140 [feet] wide at their widest point. The easterly most area is situated on uplifted and eroded terrain associated with the Qfo (6) alluvial terrace surface. The proposed habitable area to the west is situated on recent alluvial deposits principally within an active drainage course.

The easterly 340 [feet] of Trench T-5 is situated within terrain that has been mapped as Qfo (6). A significant portion of these alluvial deposits appear to have been cut by active faults. The only portion that appears to have been unaffected is the roughly 35 [foot] wide section between Stations 2+88 and 3+23 that is inclined at a gradient of approximately 29 percent. This area may (sic) not be large enough to be considered buildable particularly when considering its narrow shape and the steepness of the existing ground surface.

The westerly portion of Trench T-5 from Station 3+40 to 5+26 is largely underlain by recent alluvial deposits. The contact at the base of the Holocene alluvial sediments has not been exposed over most of this portion of Trench T-5 and as such a definitive statement regarding the active faulting cannot be made by the project consultant. Based on these conditions it is recommended that the proposed habitable [area] associated with the westerly portion of Trench T-5 not be accepted without deepening of the trench to expose the full section of Holocene alluvial fan deposits, from the contact with the underlying Pleistocene alluvium to the ground surface, that are unaffected by fault features. The project consultant should also consider the buildability of this area considering the potential for flood related issues as this area is largely situated in an active drainage course.

Response: In conformance with the recommendation provided in the comment above, Trench T-5 was re-trenched to expose the full section of the Holocene alluvial fan from the ground surface down to its contact with the underlying older Pleistocene alluvium. Deepened Trench T-5 was also extended west for an additional 155 feet to Station 7+00. Based upon our observations and logging of the deepened exposure, active faulting was not observed in the older deposits between Station 3+40 through 5+26. This find is not consistent with the faults found in Trench T-6 to the south. An effort was made to crosscut the faults projecting northward from Trench T-6 in order to account for the lack of faulting observed in deepened Trench T-5, but this could not be accomplished. Instead, both the geologic log of Trench T-6 and the geomorphic expression of the topography surrounding Trench T-6 were re-interpreted to be a landslide, which accounts for the lack of faulting in deepened Trench T-5. Landslide features are observed in Trench T-6, and they include a buried head scarp at Station 2+90, a backfilled graben between Stations 2+90 and 3+85, back-rotated landslide blocks between Stations 3+85 and 5+10, and basal slide planes near the landslide toe between Stations 5+10 and 5+38. Geomorphic landslide

features are also observed in the topography that surround Trench T-6, and they include a steepened slope at the landslide head, two re-entrant gullies ascending up to the landslide head from the drainage on the north and from the drainage on the south, and “over-steepened” slopes on both hills that ascend from where these drainages converge, which is the same location where the landslide came to rest. The landslide has been somewhat modified and “melted” by cumulative erosion over time, but the geomorphic features are still substantially preserved.

Active faulting was observed at the westernmost extent of deepened Trench T-5 from Station 6+80 to 7+00. This observation is a better fit for Significant Fault No. 3, which projects north from the westernmost extent of Trench T-6. It is interpreted that this east-dipping fault provided the mechanism by which movement occurred along the toe for this landslide. Therefore, based on the new data observed in deepened Trench T-5 our new interpretation for the landslide in Trench T-6, and the potential for flood related hazards from the drainage, the proposed habitable areas on Lot 45 have been revised, and they are delineated on the Revised Geologic Map.

- **Lot 46**

The designated habitable area within Lot 46 is based on the fault related features and their structural orientations as observed and subsequently depicted in the log of Trenches T-10. The geomorphic features mapped within Lot 46 have been designated as Qfo (6), Qfo (7) having respective ages varying from 200,000 to more than a million years old as previously determined by Bruce Schell. The alluvial sediments exposed in the fault Trench T-10 is described by SGSI as being recent to late Pleistocene in age. The designated habitable area within Lot 46 is depicted as an irregular shaped area approximately 250 feet long and 140 [feet] wide.

The westerly portion of Trench T-10 from Station 0+00 to 1+20 is underlain by recent alluvial deposits. The contact base of the Holocene sediments has not been exposed within this portion of Trench T-10 and as such a definitive statement regarding the active faulting cannot be made by the project consultant within this portion of the proposed habitable area. In addition, the attitude of fractures noted cutting through the recent deposits are similar to the orientation of the crossing faults observed in Trench T-2 and T-6. Based on these conditions it is recommended that the proposed habitable area associated with the westerly portion of Trench T-5 not be accepted without deepening of the trench to expose the full section of Holocene alluvial fan deposits, from the contact with the underlying Pleistocene alluvium to the ground surface, that are unaffected by fault related features.

Response: In conformance with the recommendation provided in the comment above, Trench T-10 was re-trenched to expose the full section of the Holocene alluvial fan from the ground surface down to its contact with the underlying older Pleistocene alluvium. Based upon our observations and logging of the deepened exposure, active faulting was observed from Stations 0+50 through 1+10. This find is consistent with tonal lineaments previously observed in our aerial photographic review and with the southward projecting faults found in Trench T-6 to the north. Therefore, the proposed habitable area within Lot 46 is hereby completely removed.

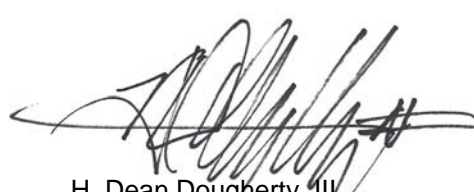
• **ADDITIONAL COMMENT**

The existing residential development and the proposed developments within Tentative Tracts 37-16 and 37-46 will rely upon onsite water wells, pipelines and water storage devices for domestic water supply, including adequate supply for fire flow. Some of these existing and planned facilities are or will be situated in areas that are likely to be adversely impacted by the future occurrence of a significant earthquake associated with the White Mountain Fault. Some consideration should be given to the possibility that fires associated with future earthquake events may not be adequately addressed as a result of the disruption or damage to the domestic water system by the same earthquake event.

Response: This comment is noted and hereby referred to the regulatory agencies that are responsible for enforcing the specifications that are already in place for such scenarios.

This opportunity to be of additional service is appreciated.

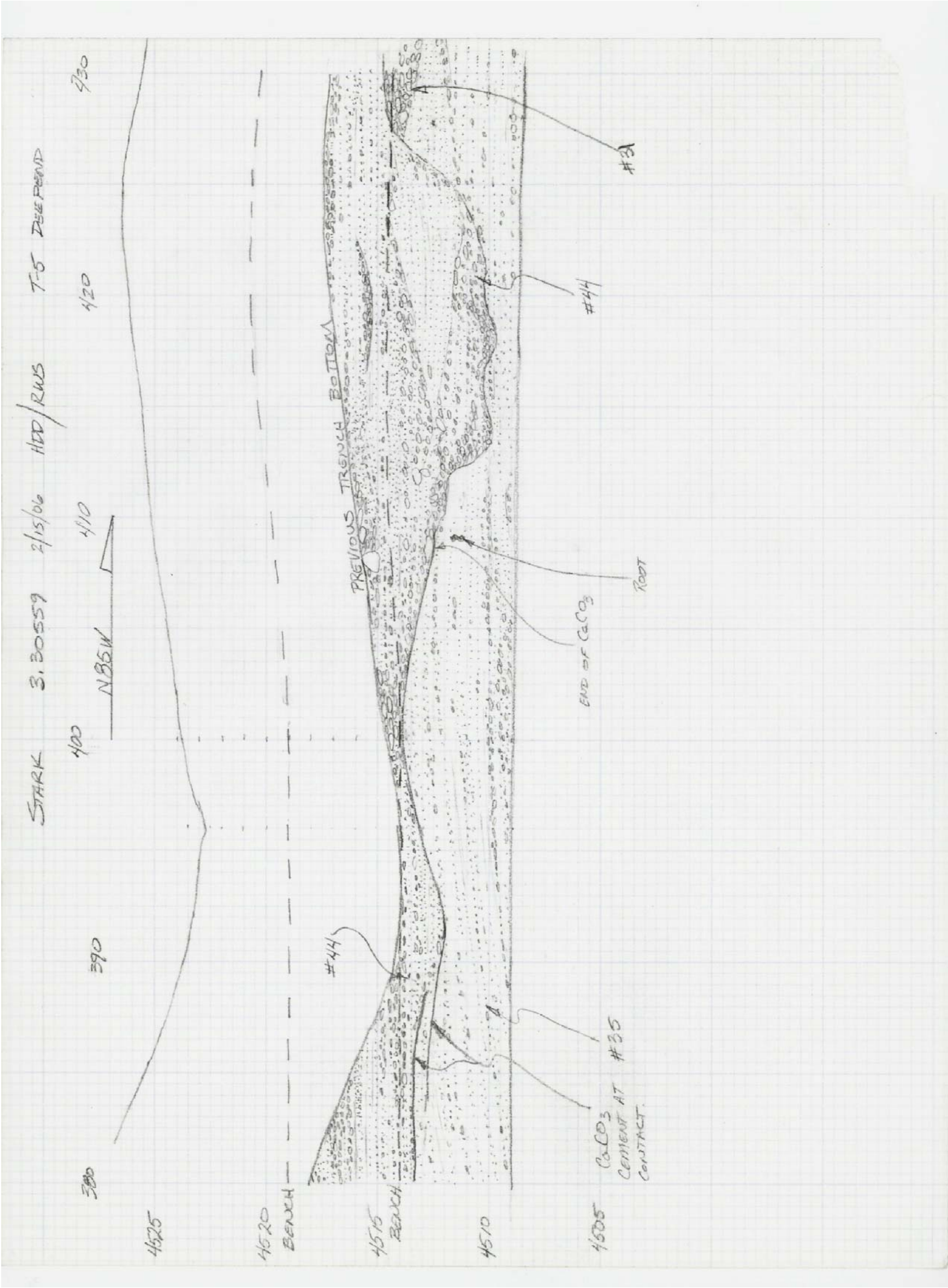
Respectfully,
SIERRA GEOTECHNICAL SERVICES, INC.


H. Dean Dougherty, III
Professional Geologist No. 6497

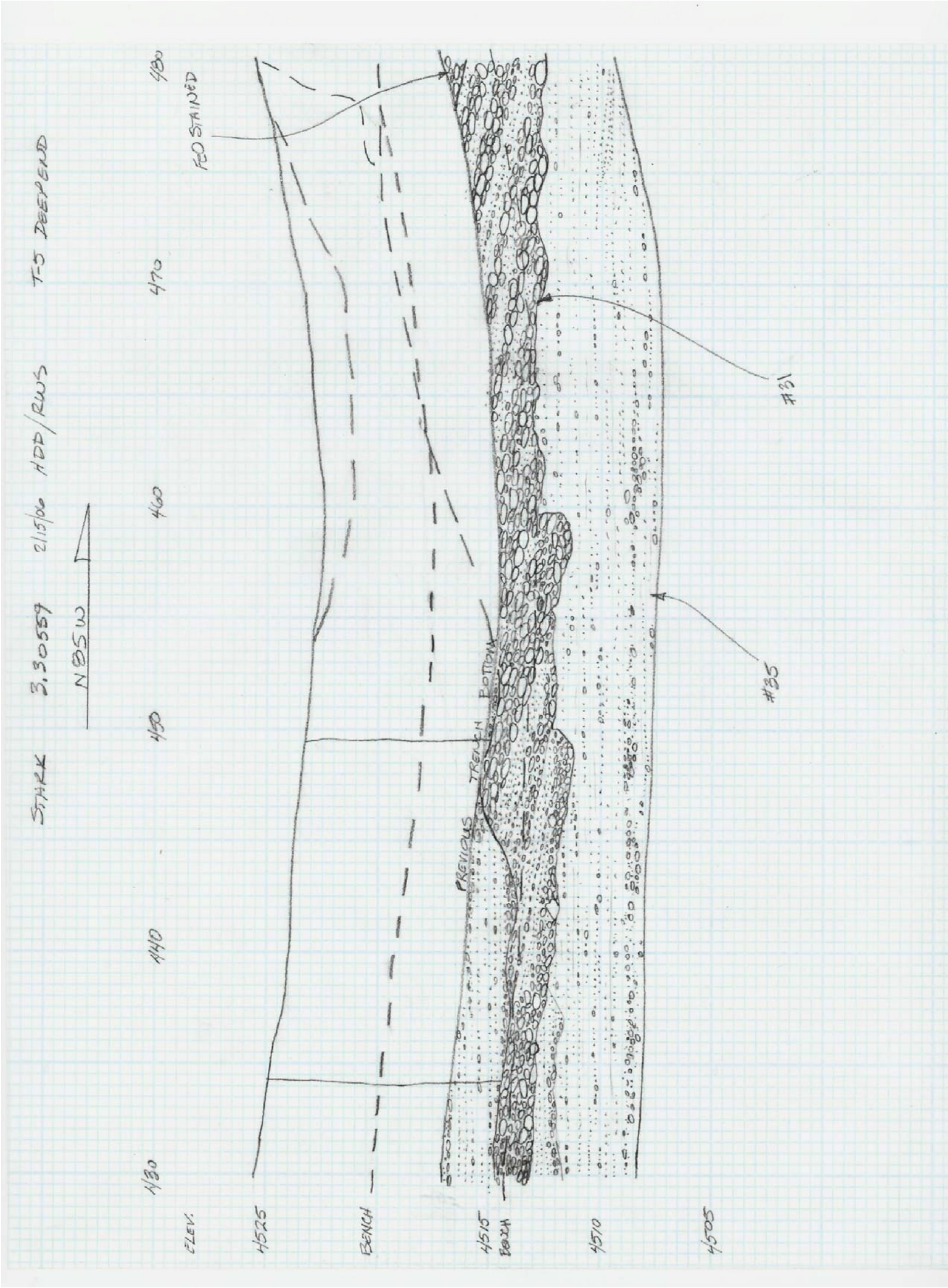


Attachments: Geologic Log of Deepened Trench T-5, Sheets 1 – 7 of 7
Geologic Log of Deepened Trench T-10, Sheets 1 – 4 of 4
Revised Geologic Map, Plate 1

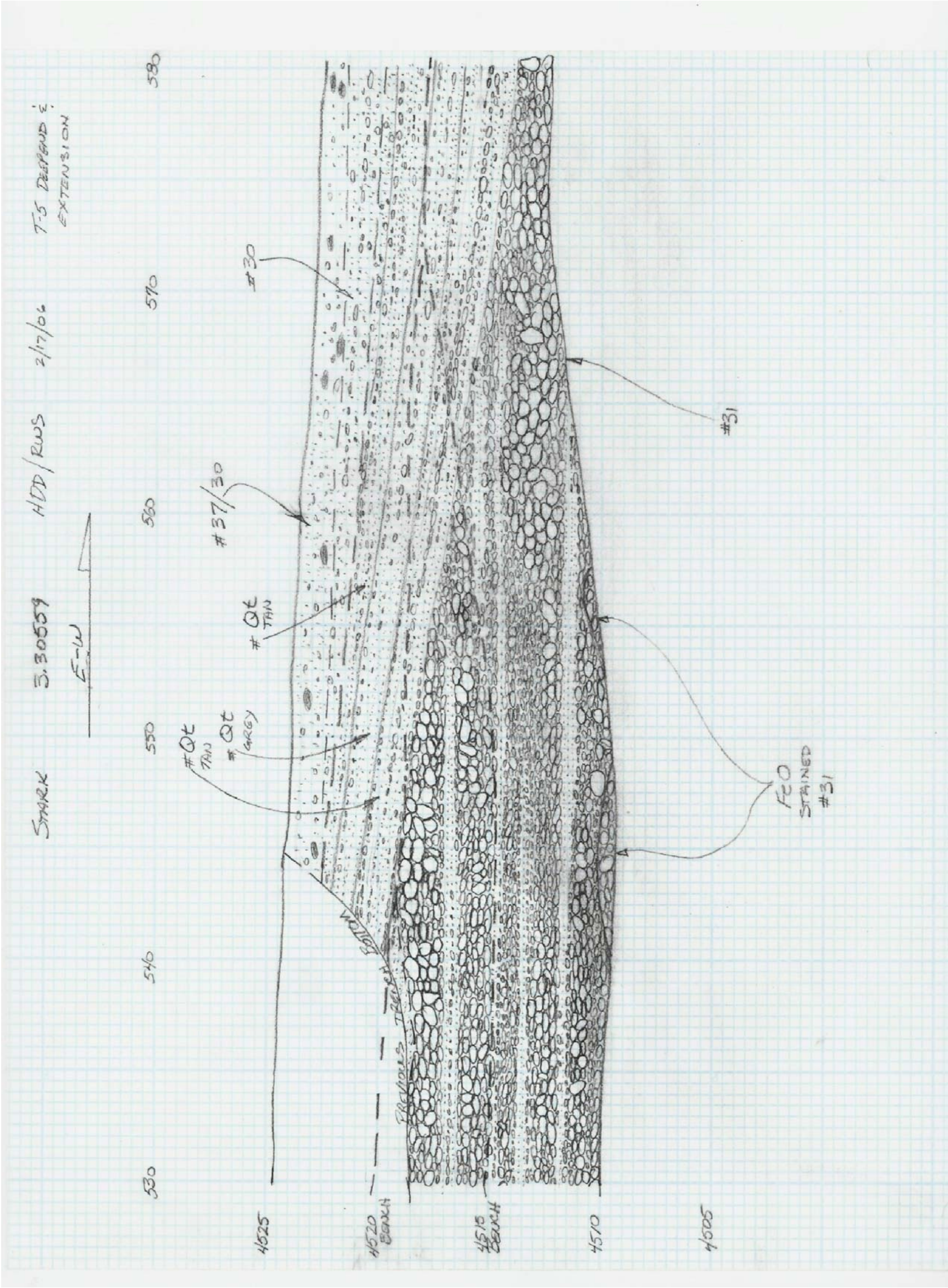
GEOLOGIC LOG OF DEEPENED TRENCH T-5
SHEETS 1 – 7 OF 7



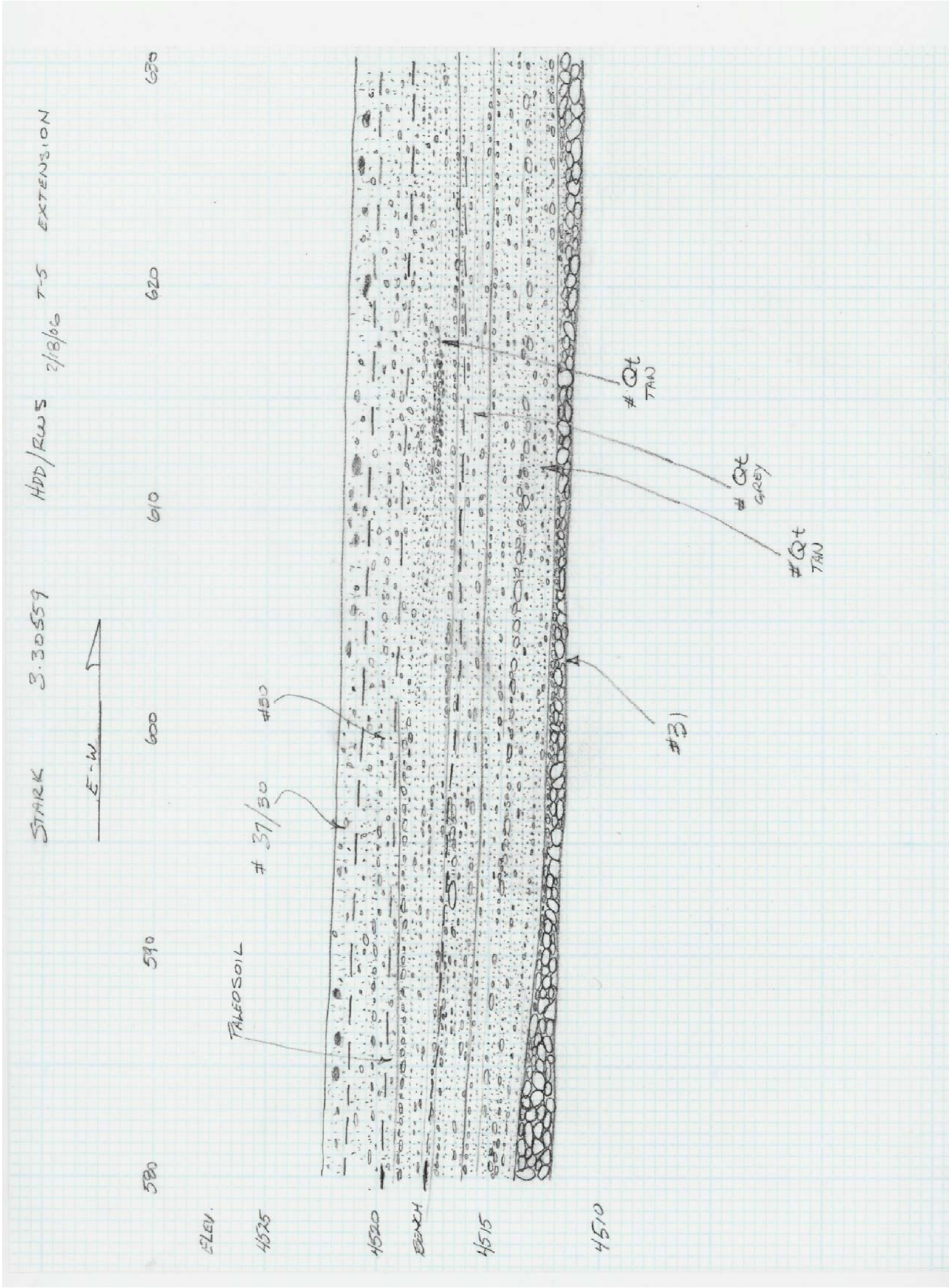
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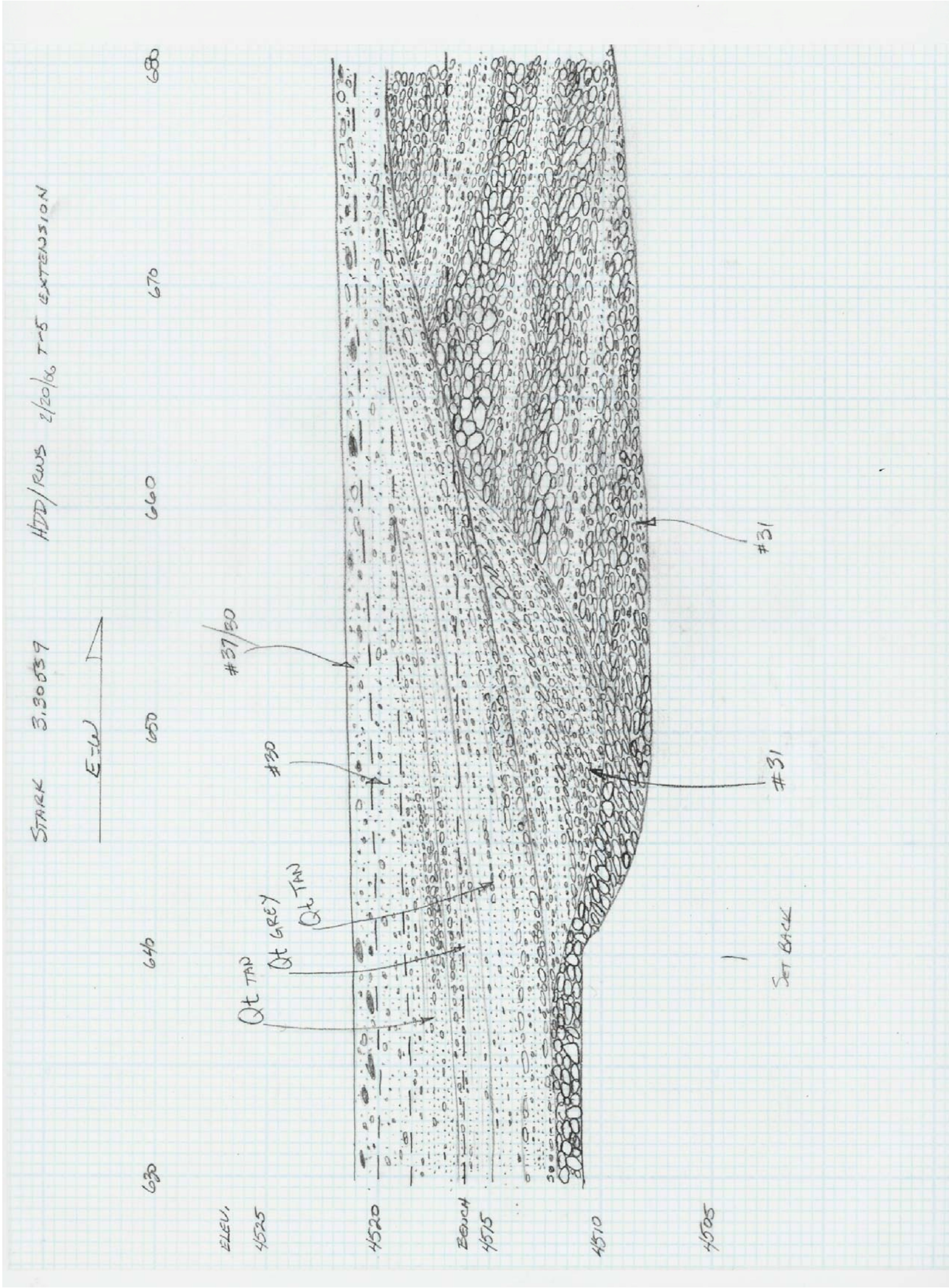
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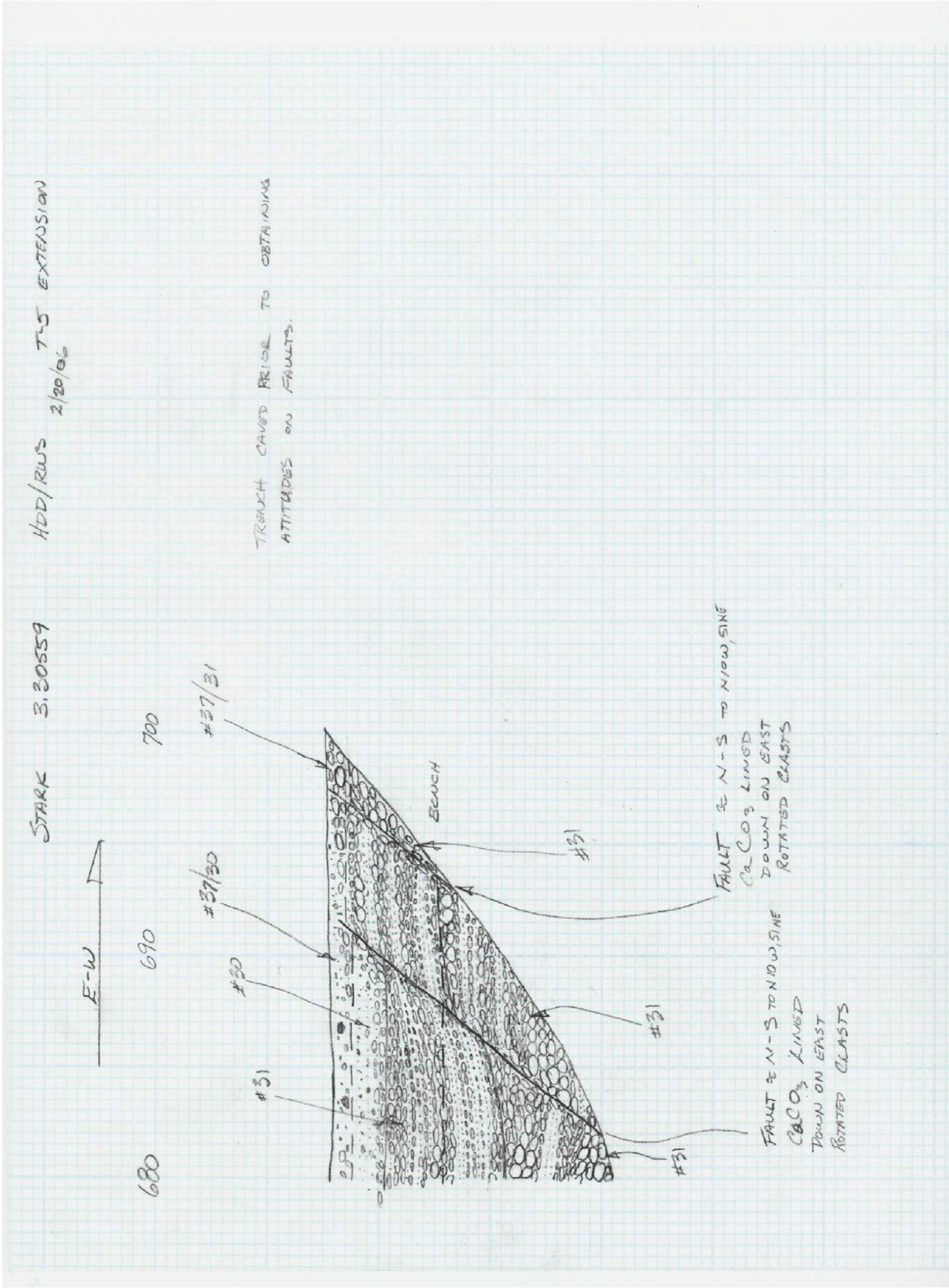
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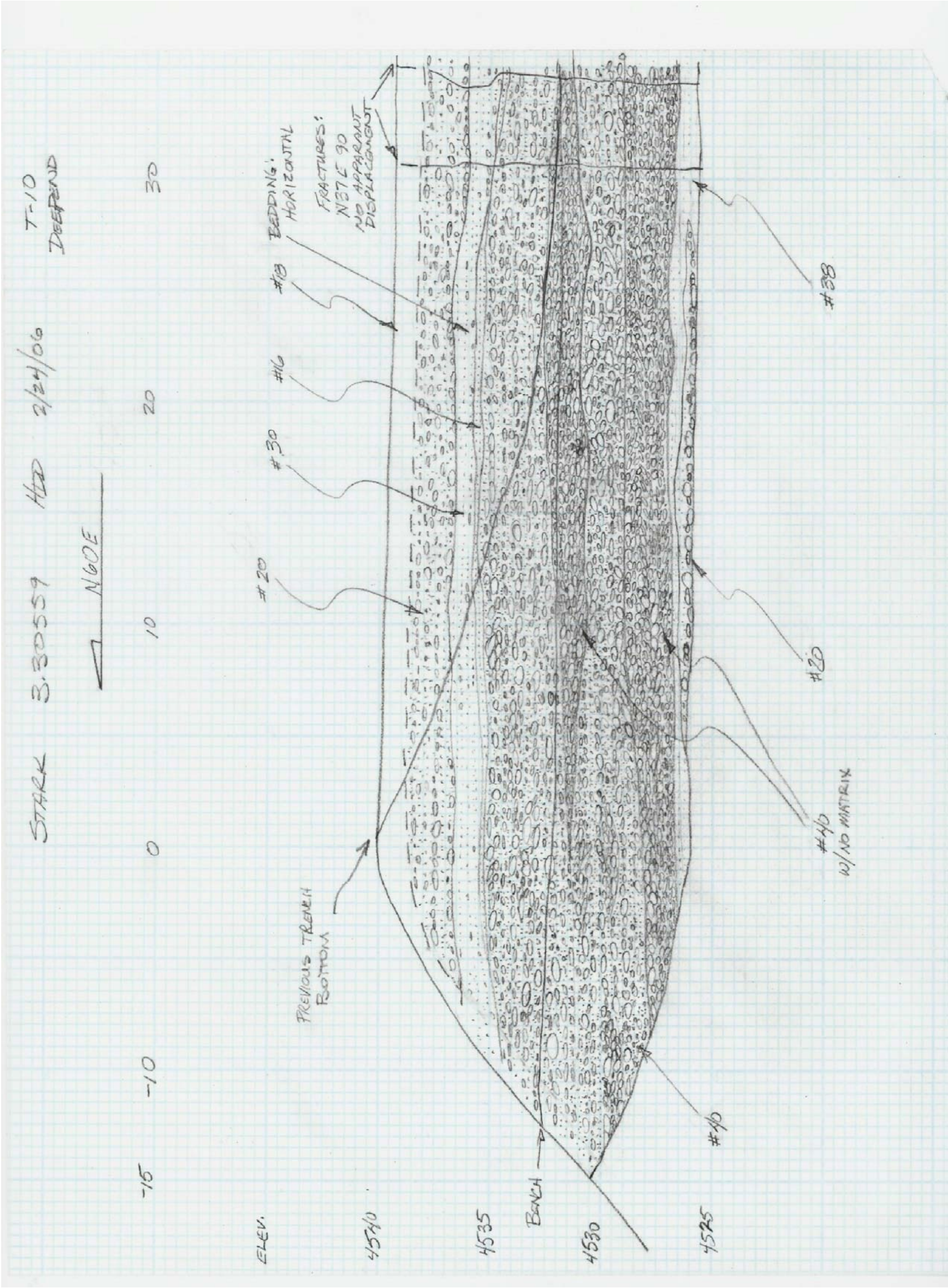


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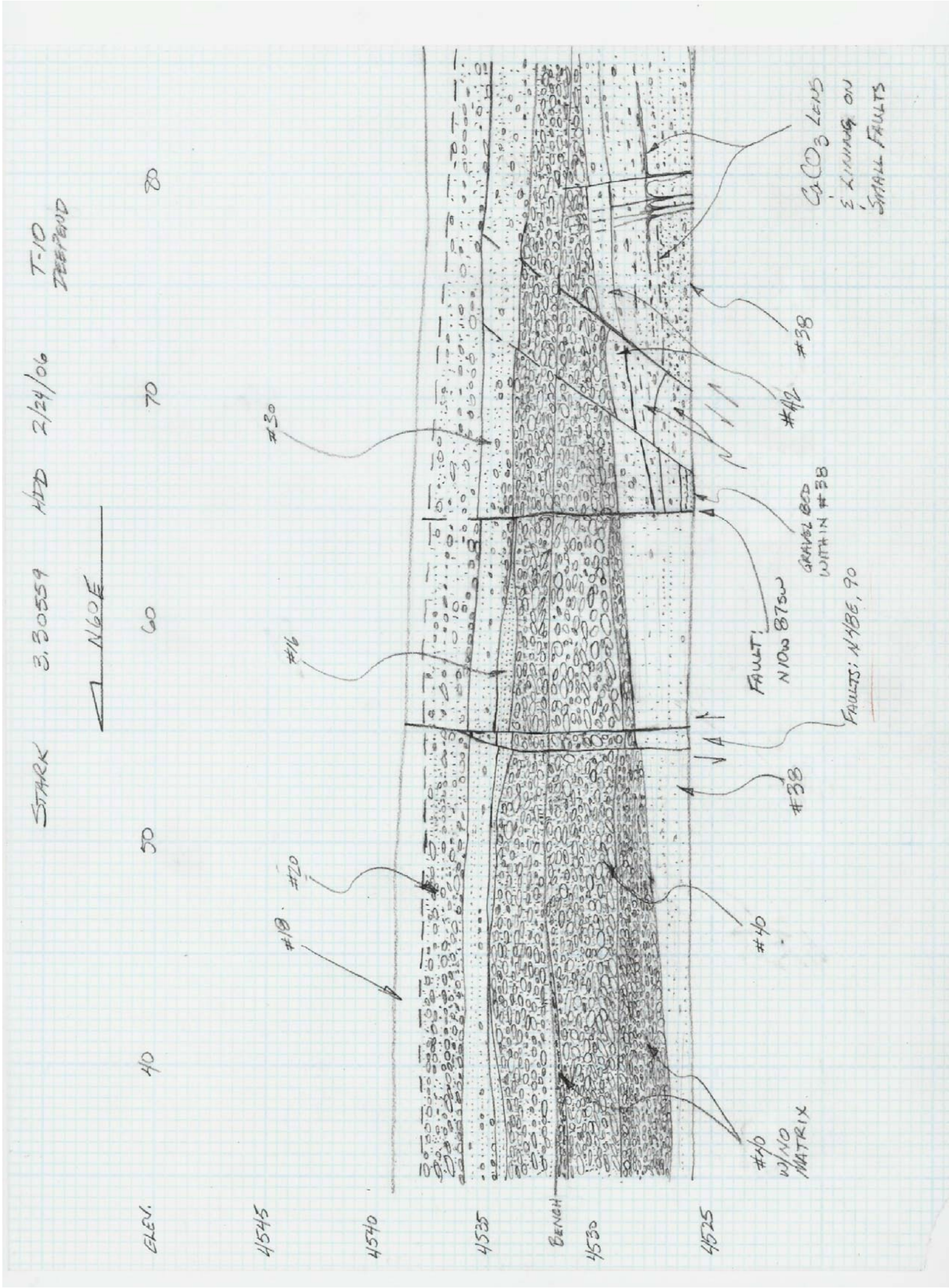


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GEOLOGIC LOG OF DEEPENED TRENCH T-10
SHEETS 1 – 4 OF 4

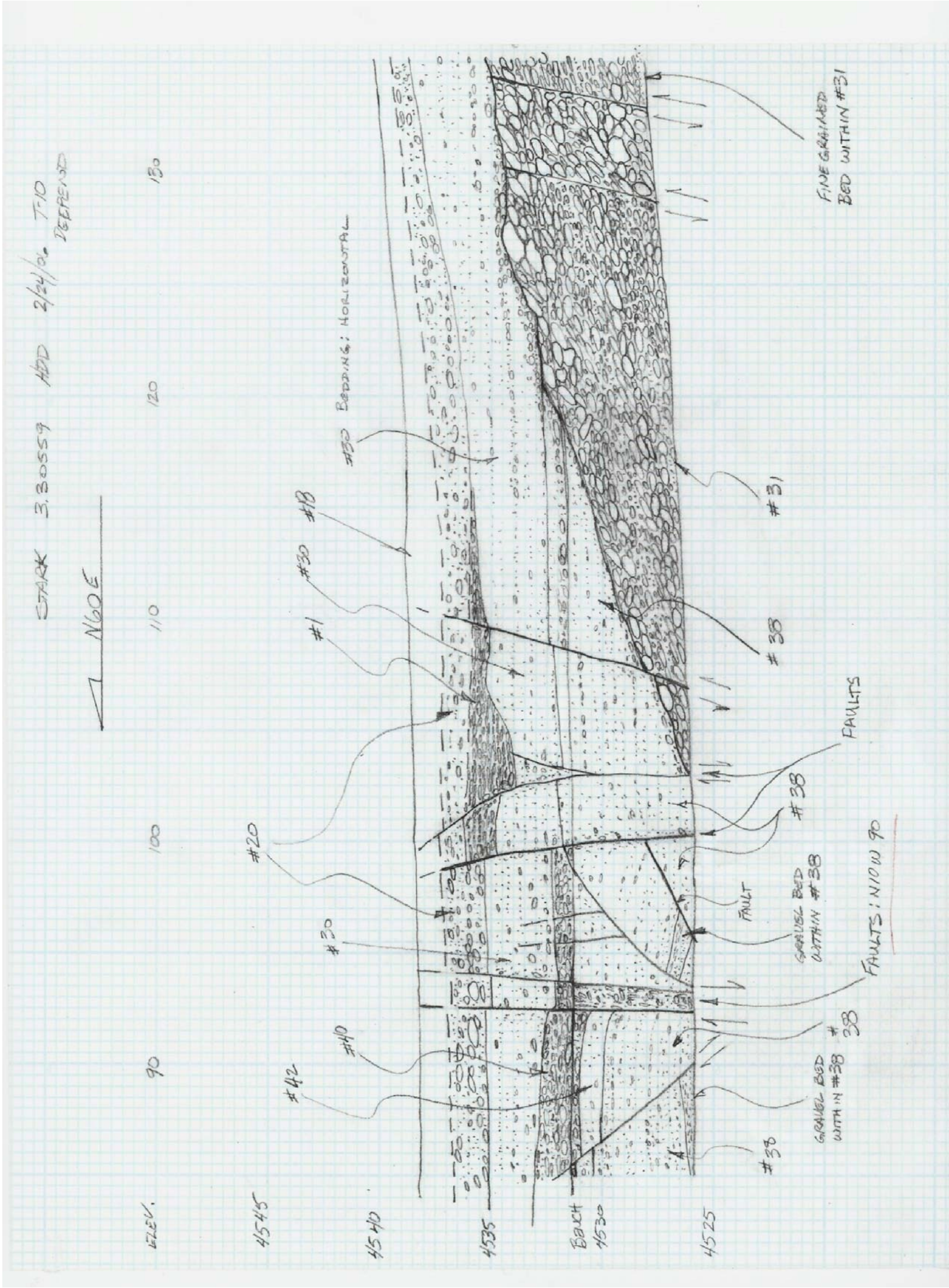


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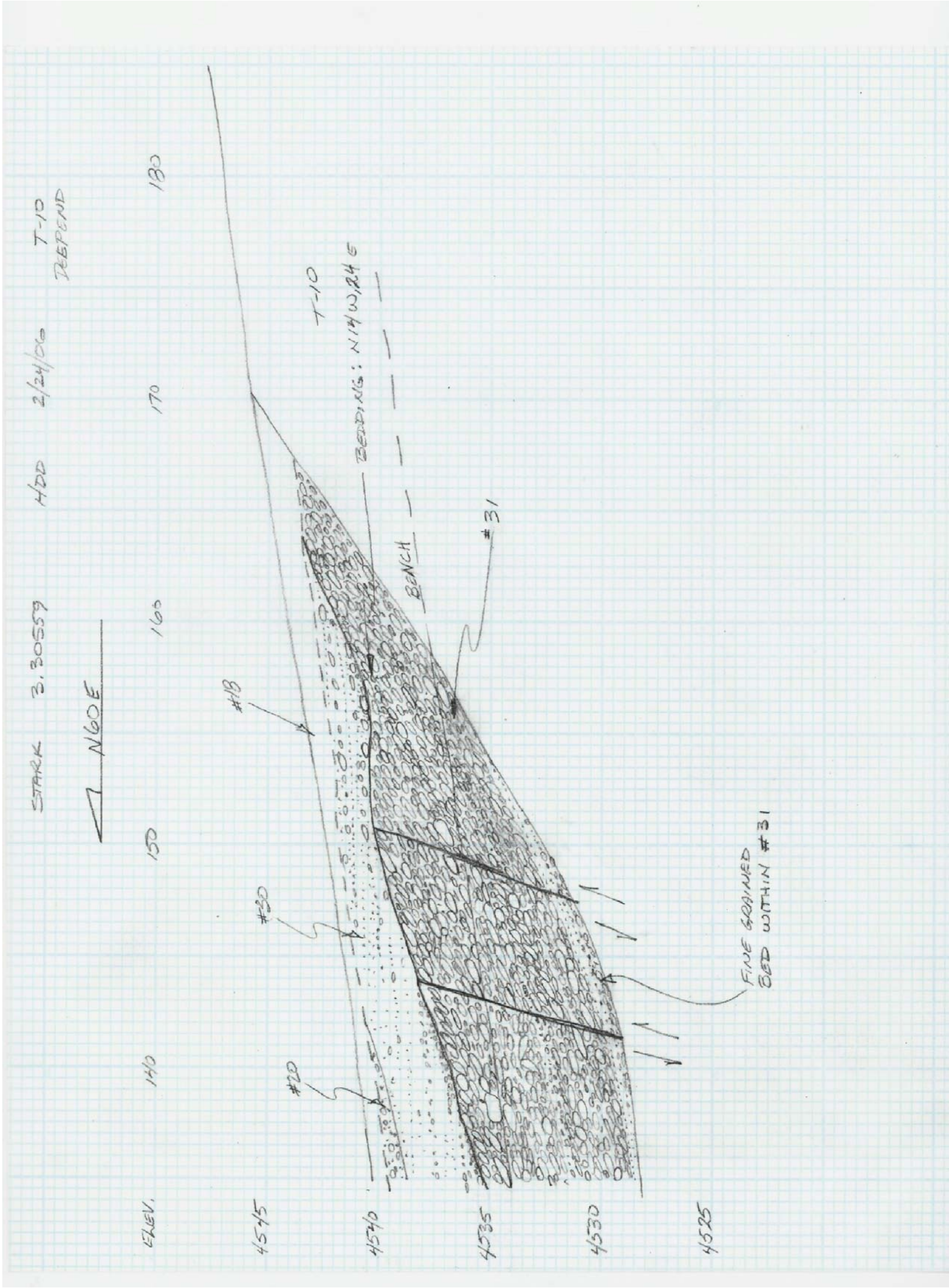


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NOTE: REFER TO OTHER LOGS OR REPORT TEXTS FOR DETAILED DESCRIPTIONS OF DENOTED LITHOLOGIC UNITS



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REVISED GEOLOGIC MAP
PLATE 1

